

REMARKS/ARGUMENTS

The Office Action mailed March 12, 2004, has been received and reviewed. Claims 1 through 26 are currently pending in the application. Claim 1 stands rejected. Claims 13 through 26 are allowed. Claims 2 through 12 have been objected to as being dependent upon a rejected base claim, but the indication of allowable subject matter in such claims is noted with appreciation. Applicants have amended claims 1, 2, 4-6, 11, 13-15, 17-19, 25, and 26 and respectfully request reconsideration of the application as amended herein.

35 U.S.C. § 102(b) Anticipation Rejections

Anticipation Rejection Based on U.S. Patent No. 5,936,305 to Akram

Claim 1 stands rejected under 35 U.S.C. § 102(b) as being anticipated by Akram (U.S. Patent No. 5,936,305). Applicants respectfully traverse this rejection, as hereinafter set forth.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Regarding claim 1, Applicants respectfully disagree that each and every element as set forth in claim 1 is found, either expressly or inherently described in the Akram reference. The Office Action cites elements from FIG. 7 in the Akram reference and notes the elements in the reference are analogous to the present invention of a substrate (102 in reference), a plurality of semiconductor dies (106 in reference), and a plurality of signal connection devices (bond pad 110 in reference) on the active surface.

However, claim 1 of the present invention recites an element of a “top surface” upon which the active surface of the semiconductor dice are disposed. The element name “top surface” implies an orientation that may cause some confusion because the final assembly is flipped over during processing. To address this possible orientation confusion, Applicants have amended

claim 1 to change the element name “top surface” to “attachment surface.” Similarly, Applicants have changed the element name of “bottom surface” to “opposing surface.” Additionally, Applicants have added other clarifying amendments to remove references to “cavities,” which may exist during processing, but are only present as “openings” through the substrate in the device as claimed. These amendments are to remove orientation references and structures of intermediate processing activities and are not intended to limit the scope of the invention as initially claimed.

With these amendments, it becomes clearer why each and every element of the present invention is not described in the Akram reference as shown in FIG. 7. Specifically, the Akram reference does not include the limitation from amended claim 1 of, “the active surfaces of the plurality of semiconductor dice are adhered to the attachment surface of the substrate.” Rather, the Akram reference includes “a plurality of recesses 15 to receive dice 106 and 106' of varying sizes” (col. 6, line 21-22) and the “dice 106 and 106' are adhered in recesses 105” (col. 6, lines 54-55). As can be seen in FIG. 7 of the Akram reference, the active surfaces of the semiconductor dice are disposed in the “recesses.” Whereas, in the present invention as can be seen in FIG. 1E of the present invention, the active surfaces of the semiconductor dice are disposed against the attachment surface 104 of the substrate 102 and not in any type of recess.

As a result, the Akram reference does not disclose each and every element as set forth in amended claim 1, either expressly or inherently described. Therefore, amended claim 1 is allowable and Applicants respectfully request the rejection of claim 1 be withdrawn.

Objections to Claims 2 through 12/Allowable Subject Matter

Claims 2 through 12 stand objected to as being dependent upon a rejected base claim, but are indicated to contain allowable subject matter and would be allowable if placed in appropriate independent form.

Regarding claims 2- 12, Applicants note with appreciation the indication of allowable subject matter. However, because amended claim 1 is now allowable, claims 2-12 are allowable

as depending from a allowable claim. As a result, claims 2 through 12 are allowable and Applicants respectfully request that the objections to claims 2 through 12 be withdrawn.

Additionally, some of claims 4-12, which were indirectly dependent from claim 2, have been rewritten to be directly dependent from claim 2. These changes are as follows;

- claim 4 has been rewritten to depend from claim 2 rather than claim 3,
- claim 5 has been rewritten to depend from claim 2 rather than claim 4,
- claim 6 has been rewritten to depend from claim 2 rather than claim 5, and
- claim 11 has been rewritten to depend from claim 2 rather than claim 10.

Regarding claims 13 and 14, the Examiner has allowed these claims as written. However, these claims recite the semiconductor device package of claim 1 as an element of a memory device and a computing system, respectively. Consequently, Applicants have amended claims 13 and 14 with similar modifications as recited in amended claim 1. As with claim 1, these amendments to claims 13 and 14 are not intended to limit or modify the scope of the invention as initially claimed.

Regarding claim 15, the Examiner has allowed this claim as written. However, as with claim 1, Applicants wish to amend claim 15 to remove some orientation references and change some of the language. As with claim 1, these amendments to claim 15 are not intended to limit or modify the scope of the invention as initially claimed.

Regarding claims 17, 18, 19, the Examiner has allowed these claims as written. However, Applicants are amending claims 17, 18, 19 as follows:

- claim 17 has been rewritten to depend on claim 15 rather than claim 16,
- claim 18 has been rewritten to depend on claim 15 rather than claim 17, and
- claim 19 has been rewritten to depend on claim 15 rather than claim 18.

These amendments to claims 17-19 should not affect the patentability of claims 17-19 because they are still dependent from independent claim 15, which was noted by the Examiner as allowed. As a result, Applicants request that amended claims 17-19 be allowed.

Regarding claims 25 and 26, the Examiner has allowed these claims as written. However, these claims contain the semiconductor device package of claim 15 as an element of a memory device and a computing system, respectively. Consequently, Applicants have amended claims 25 and 26 with similar modifications as recited in amended claim 15. As with claim 15, these amendments to claims 25 and 26 are not intended to limit or modify the scope of the invention as initially claimed.

ENTRY OF AMENDMENTS

The amendments to claims 1, 2, 4-6, 11, 13-15, 17-19, 25, and 26 above should be entered by the Examiner because the amendments are supported by the as-filed specification and drawings and do not add any new matter to the application.

CONCLUSION

Claims 1-26 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, he is respectfully invited to contact Applicants' undersigned attorney.

Respectfully submitted,



Jeff M. Michelsen
Registration No. 50,978
Attorney for Applicant(s)
TRASKBRITT
P.O. Box 2550
Salt Lake City, Utah 84110-2550
Telephone: 801-532-1922

Date: June 14, 2004

JMM/ps:rh

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